

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number  
**WO 2005/051089 A1**

(51) International Patent Classification<sup>7</sup>: **A23D 9/05**, 7/05,  
B01J 2/04, F25D 25/00, B01D 9/00

(21) International Application Number:  
PCT/GB2004/004755

(22) International Filing Date:  
11 November 2004 (11.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0326491.8 13 November 2003 (13.11.2003) GB

(71) Applicant (for all designated States except US): **THE  
BOC GROUP PLC** [GB/GB]; Chertsey Road, Windle-  
sham, Surrey GU20 6HJ (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **QUARINI, Giuseppe,  
Leonardo** [GB/GB]; Crosswinds, Didcot Road, Harwell,  
Oxon OX11 0DW (GB).

(74) Agent: **WICKHAM, Michael**; The BOC Group plc,  
Chertsey Road, Windlesham, Surrey GU20 6HJ (GB).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

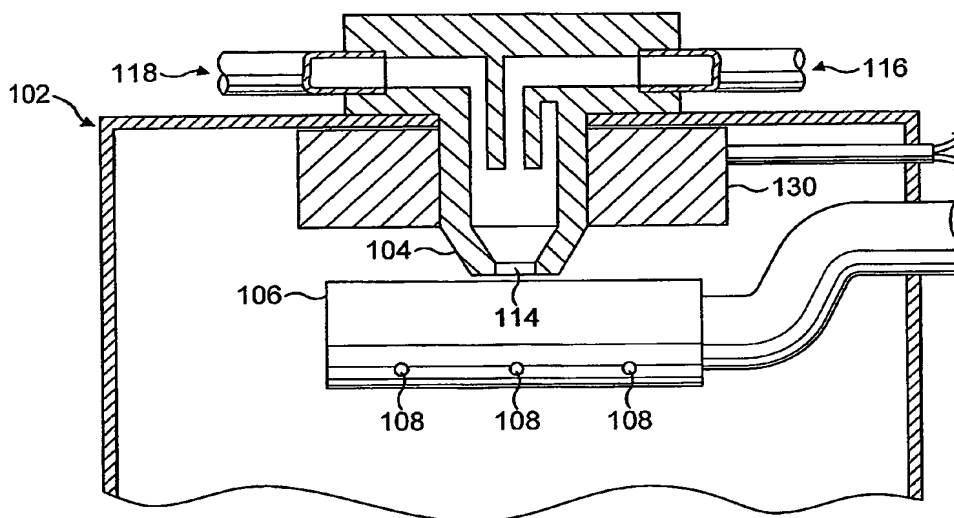
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,  
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: COOLING OF LIQUIDS



(57) Abstract: A feed liquid, for example, a molten fat, is formed into at least one sheet of flowing particles and is cooled by directing cryogen at the particles from both sides of the sheet. By this means, a molten liquid such as fat may be spray crystallised.

WO 2005/051089 A1